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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,076	04/05/2001	Stephen A. Empedocles	019916-004300US	6626

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ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 10/03/2002 14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/827,076	EMPEDOCLES ET AL.	
	Examiner	Art Unit	
	My-Chau T. Tran	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-19 and 58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-19 and 58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *08 July 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Applicant's amendment filed 7/8/02 in Paper No. 12 is acknowledged and entered. Claims 1, 3, 12, and 17 are amended. Claim 58 is added. Claims 2 and 20-57 are canceled. Claims 1, 3-19, and 58 are pending.

Drawings

2. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 7/8/02, has been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

3. The Patent and Trademark Office no longer makes drawing changes. See 1017 O.G. 4. It is applicant's responsibility to ensure that the drawings are corrected. Corrections must be made in accordance with the instructions below.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1 and 3-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Bawendi et al (US Patent 6,326,144 B1).

Bawendi et al. anticipated the claimed invention by teaching a system that include of a plurality of labels generating identifiable spectra in response to excitation energy (col. 3, line 32-35; col. 3, line 60-67; col. 5, line 37-40) and a detector imaging at least some of the spectra for identification of the labels (col. 3, line 39-40; col. 15, line 36-41). The spectra comprise a plurality of signals defining a plurality of wavelengths (col. 3, line 60-67). The labels comprise

semiconductor nanocrystal (col. 3, line 32-35). Each labels comprises at least one population of semiconductor nanocrystals, each population generating a signal having a population wavelength in response to the excitation energy (col. 3, line 36-41; col. 5, line 37-50). Some of the labels are linked to the substrate and bound to the array (matrix) (col. 12, line 27-34). The system also includes a probe body including a label and an associated assay indicator marker, which generate a signal in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col. 14, line 32-39). The indicator markers are generating indicator signals in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col.14, line 32-39). The imaged labels are distributed across a two dimensional sensing field (col. 16, line 11-23 and 29-37).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 8-19 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bawendi et al (US Patent 6,326,144 B1) in view of either Lewis et al (US Patent 5,377,003) or Nagoshi et al. (US Patent 5,495,334).

The system of Bawendi et al. is disclosed above.

The apparatus of Bawendi et al. differs from the claimed invention in failing to specifically disclose the components of an optical system such as a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD).

Lewis et al. and Nagoshi et al. disclose a spectroscopic imaging system, which includes a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD) indicator for a two-dimensional detector (Lewis: Abstract; fig. 10B and 11B; col. 15, line 18-45; Nagoshi: Abstract; col. 1, line 20-31; col. 2, line 65-67 and continue through col. 3, line 1-31) for the advantage of rapidly and simultaneously recording and analyzing thousands of absorption spectra with high spatial resolution (Lewis: col. 5, line 12-15). Further, such optical components are considered conventional and required in an optical system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Bawendi et al. by including a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD) as taught by Lewis et al. or Nagoshi et al. for the advantage of rapidly and simultaneously recording and analyzing thousands of absorption spectra with high spatial resolution.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1 and 3-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 09/827,013 (Empedocles et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious to those of ordinary skills in the art to recognize that the claims of the copending application (Empedocles et al.) would encompass the claimed invention.

For example, the plurality of labels generating identifiable spectra in response to excitation energy, a detector imaging at least some of the spectra for identification of the labels,

and the spectra comprise a plurality of signals defining a plurality of wavelengths of claim 1-2 are disclosed in claim 1of Empedocles et al. In claim 3, the labels comprise semiconductor nanocrystal is disclosed in claim 2 of Empedocles et al. In claim 4, each labels comprises at least one population of semiconductor nanocrystals, each population generating a signal having a population wavelength in response to the excitation energy is disclosed in claim 3-5 of Empedocles et al. Some of the labels comprise a plurality of the populations supported by a matrix of claim 5 is disclosed in claim 6 of Empedocles et al.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 6-7 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 09/827,013 (Empedocles et al.) in view of Bawendi et al. (US Patent 6,326,144 B1).

The system of Empedocles et al. is disclosed above.

Empedocles et al. disclosed the claimed invention except for a probe body including a label and an associated assay indicator marker.

Bawendi et al. teaches a two-dimensional imaging system that also includes a probe body including a label and an associated assay indicator marker, which generate a signal in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col. 14, line 32-39). The indicator markers are generating indicator signals in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col.14, line 32-39). The imaged labels are distributed across a two dimensional

sensing field (col. 16, line 11-23 and 29-37). This system would provide the advantage of a high resolution of multiply sized semiconductor nanocrystals within a system and enables researchers to examine simultaneously a variety of biological moieties tagged with the semiconductor nanocrystals (col. 3, line 54-59).

Response to Arguments

4. Applicant's arguments filed 7/8/02 have been fully considered but they are not persuasive. Applicant contends that Bawendi et al. has not been shown to describe or suggest a plurality of signals for each label as recited in amended claim 1. It is the examiner position that Bawendi does describe a label with a plurality of signals (col. 6, lines 57-65; col. 7, lines 17-28 and 47-50). Bawendi discloses that a single quantum dots (label) have been observed to have FWHMs of 12-15 nm (col. 7, lines 2-3). Further, the label (semiconductor nanocrystals) discloses in the specification (pg. 15, lines 27-34 to pg. 16, lines 1-32) are the same as the Bawendi quantum dots (semiconductor nanocrystals) (col. 5, lines 37-39; col. 7, lines 1-7). Therefore, the Bawendi quantum dots would also have the features of that each quantum dot has a plurality of signals, the plurality of signals define a plurality of wavelengths, and the wavelengths from the spectra is intermingled.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 703-305-6999. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on 703-305-3399. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

mct
September 25, 2002

LONG V. LE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600
09/27/02